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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/696,485	10/25/2000	John Brian Pickering	GB9-1999-0107US1	3603
25299	7590	05/04/2004	EXAMINER	
IBM CORPORATION			MCFADDEN, SUSAN IRIS	
PO BOX 12195			ART UNIT	PAPER NUMBER
DEPT 9CCA, BLDG 002			2655	13
RESEARCH TRIANGLE PARK, NC 27709			DATE MAILED: 05/04/2004	

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/696,485	PICKERING, JOHN BRIAN	
	<b>Examiner</b> Susan McFadden	<b>Art Unit</b> 2655	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 26 January 2004.

2a) This action is FINAL.                    2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-27 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1-27 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)  
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.

4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_ .

5) Notice of Informal Patent Application (PTO-152)

6) Other: \_\_\_\_\_.

## DETAILED ACTION

### ***Response to Amendment***

### ***Response to Arguments***

1. Applicant's arguments, see paper number 11, filed 1-26-04, with respect to claims 1-27 have been fully considered and are persuasive. The previous action has been withdrawn and the following rejections are noted.

Applicant has argued that Van Tichelen et al. do not show barge-in capability providing speech recognition on audio input to determine a corresponding text and performing lexical analysis to determine whether the text satisfies one or more conditions. In column 13, line 26 and Figure 4, Van Tichelen shows that the recognized input speech must undergo Natural Language Understanding and various tools (grammar tool, lexical tool inherently performing lexicon analysis) can be used on the words to see whether they fit certain conditions. Speech input from a user would be converted from speech to text using the processes described above (Fig. 4). Then the speech input would be checked in a database using lexical analysis to see whether the answer matches one of the allowable answers stored in the database. If the answer matches, another prompt would be generated (col. 13, ln 10-25). If the answer doesn't match, the system would repeat the prompt or go to a help dialog. Typically, barge in systems store a list of allowable words in a database, for example if the system asked: "Who would you like to speak to?" Allowable answers would be any names of people working at the company. Marx et al. show this feature explicitly in columns 2, lines 10-25. This is analogous to the "conditions" that the applicant has stated which must be

satisfied. Applicant has argued that Van Tichelen is only relevant to "small vocabulary" applications. Van Tichelen shows that this system can be used for a variety of applications including "large vocabulary continuous speech recognition" (col. 7, ln 47-54).

The Examiner has shown that the state of the art of barge-in systems is a system that accurately recognizes words that satisfy desired conditions and turn off the prompt being generated. An example of this is the newly cited patent: Brown et al (6,604,075) which shows in column 4, line 40, the use of a "barge in" parameter; where a user can interrupt with an answer before a list or prompt is finished playing. Other relevant patents, which show the state of the art in barge-in systems are: Nguyen (5,765,130), Marx et al (6,173,266), and Holthouse et al (6,606,598).

With regard to Applicant's arguments pertaining to claim 27, Applicant has claimed "determining if said audio input is speech input". Van Tichelen shows that the "input" can be determined to be DTMF (Dial Tone Multi-Frequency) signals, speech signals determined by an Automatic Speech Recognition system, acoustic signals which can be converted into digitally encoded speech signals using Speech Music Compression techniques, and a module that converts text messages into speech (col. 1-2). Therefore this system inherently determines if the audio is speech or another type of signal.

With regard to Applicant's arguments pertaining to claims 12 and 25, Applicant has claimed "means for receiving caller input includes a voice activity detector for discriminating between speech input and other forms of tone or noise input". Garner

clearly shows in the Abstract that the voice activity detector discriminates between speech and noise in a mobile phone. It would be obvious to combine these references because they would produce a system (mobile phone or computer interface) that can operate reliably in a noisy environment (col. 2, ln 12-14). The speech controlled user interface of Van Tichelen could use a voice activity detector to generate accurate inputs. Applicant has argued that the rejection does not determine "whether to continue or terminate playing out of said prompt" which is not recited in claims 12 or 25.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1,2,5,7,8,11,12,14,15,18,20,21,24, and 27, are rejected under 35 U.S.C. 102(e) as being anticipated by Van Tichelen et al. (6,311,159).

In regard to claims 1,7,14,20, and 27, Van Tichelen et al. show in Figure 2A, a method, medium, and system for speech recognition which contains: a) circuitry that plays a prompt to a user (item 21), b) circuitry that receives an audio input from a user while the prompt is being played (barge-in, col. 7-8), c) circuitry that performs speech recognition on the audio input (when speech is determined) to determine a corresponding text (ASR: automatic speech recognition, Col. 1, Fig. 4), d) circuitry that

performs an analysis (including lexical, col. 10, ln 1-13) of the text to determine if it satisfies conditions (Natural Language Understanding (NLU), col. 13, Fig. 4), and which e) either terminate the playing of the prompt when conditions are satisfied or continuing the playing of the prompt (col. 14-col. 15, modal or non-modal, barge-in capabilities).

In regard to claims 2,8,15, and 21, the step of discarding said text is inherent when the internal timers time out (col. 15, ln 5-11). When the system has timed out, data is not used because a correct answer was not recognized and the system goes to the next prompt or restarts the dialog. Time outs are either synchronous, in which the action queue is blocked for a specific time during operation or asynchronous, in which case the prompts time out after time has elapsed (2 seconds).

In regard to claims 5,11,18, and 24, Van Tichelen et al. show that the voice processing system and user communicate with each other over a telephone network, whereby the prompt is played over a telephone and the audio is received over a telephone connection (col. 13, ln 10-25).

#### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 3,4,6,9,10,13,16,17,19,22,23, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Van Tichelen et al. (6,311,159) in view of Brown et al. (6,604,075).

In regard to claims 3,4,6,9,10,13,16,17,19,22,23, and 26, Van Tichelen et al. show that certain tools are used to check the accuracy of the spoken words (col 13, ln 40-50), based on acoustic parameters, which include a lexicon tool that inherently performs lexical analysis. Van Tichelen et al. do not specifically say that this analysis determines whether the text satisfies one or more conditions comprises the step of scanning the text to see if it contains one or more predetermined words specific to the prompt being played out. Brown et al. show a system that includes a lexical semantic module that could look for predetermined words and pass this result to speech understanding grammars (Fig. 1, items 112,106,122). Therefore, it would be obvious to one of ordinary skill in the art at the time of the invention to combine these systems because they would provide an improved voice dialog interface (col. 2, ln. 33-35)

6. Claims 12 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Van Tichelen et al. (6,311,159) in view of Garner et al. (6,427,134).

In regard to claims 12 and 25, Van Tichelen et al. show that the voice processing system and method above. They do not specifically show that a voice activity detector is used to discriminate between speech and noise. Garner et al. show a voice activity detector used in phone that discriminates between speech and noise (Abstract). If noise is detected, a signal is not transmitted and Therefore, it would be obvious to one of ordinary skill in the art at the time of the invention to add this feature because it provides the system with a more accurate input in noisy environments (col. 2, ln 10-15).

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Susan McFadden whose telephone number is 703-308-6693. The examiner can normally be reached on Monday-Friday, 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doris To can be reached on 703-305-4827. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Susan McFadden  
Primary Examiner  
Art Unit 2655

April 27, 2004